

AMENDMENTS TO THE ABSTRACT

Please substitute the following paragraph for the abstract now appearing in the currently filed specification:

This invention is regarding a frequency shifting circuit suitable for a digital demodulator in a multi-carrier communications system. After converting analog signal vectors to the input signal vectors according to a predetermined sampling clock, control data is generated from a frequency difference between sub-carrier bands and center carrier band. A signal vector rotator is provided corresponding to each of the sub-carrier bands and rotates the input signal vectors on the I-Q plane by an angle determined depending on corresponding control data to shift the sub-carrier bands of the input signal vectors to the center carrier band. A band-pass filter passes an output signal vector of the center carrier band.